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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/912,781 | 07/25/2001 | Jean Louis Calvignac | RAL920010025US1 | 5146 |
| 26675 | 7590 | 10/04/2005 | EXAMINER | |
| DRIGGS, LUCAS, BRUBAKER & HOGG CO. L.P.A. 38500 CHARDON ROAD DEPT. IRA WILLOUGBY HILLS, OH 44094 | | | MAIS, MARK A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2664 | |

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/912,781 | CALVIGNAC ET AL. |
| | Examiner | Art Unit |
| | Mark A. Mais | 2664 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-22 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 July 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by XXX.

With regard to claims 1, 6, 11 and 16, Brewer et al. discloses a system, multiprocessing system, and method for transmitting multiple data frames to processing functions in a given sequence, performing the processing on the frames and forwarding the processed frames to their destination in the same given sequence, comprising:

- a) an input buffer for receiving frames for processing [Fig. 1, **input queues 102 and 103, col. 3, lines 31-37**];
- b) a unit for determining the processing operation to be performed on each frame [**Packet Forwarding Engines 13 inspect the packet headers and performs a filtering function on the packets by destination, whether local or external, col. 3, lines 38-47**];
- c) an arbitrator for assigning each frame to one of a plurality of processing core engines [**Fig. 1, ASIC 11 determines exit path selection for all packets that enter processing block**

101 (what Packet Forwarding Engine 13 to send to) and inserts a sequence number on each packet, col. 3, lines 24-29];

d) an output buffer for collecting the processed frames [Fig. 1, reorder queues 105, 106, and 107 combine the payload with the header information, col. 6, lines 1-4], and
e) a sequencer for forwarding processed frames from the output buffer to their destination in the same order as the frames are received by the input buffer [Fig. 1, packet ordering block 108 examines reorder queues 105, 106, and 107 for sequence numbers and sends the packets out in the original order, col. 6, lines 1-20].

3. With regard to claims 2, 7, 12 and 17, Brewer et al. discloses that the input buffer is contained in a Data Moving Unit [Fig. 1, router system 10, col. 3, lines 20-22].

4. With regard to claims 3, 8, 13 and 18, Brewer et al. discloses that the output buffer is also contained in said Data Moving Unit [Fig. 1, router system 10, col. 3, lines 20-22].

5. With regard to claims 4, 9, 14 and 19, Brewer et al. discloses that the unit for determining operation comprises a Frame Header Processing Unit having a buffer capacity at least twice the size of the largest frame to be processed [**Packet Forwarding Engine 13 handles either 2 less-than-200 byte inputs from queues 102 or 1 greater-than-200 byte input from queue 103, col. 4, lines 14-18, and col. 4, line 45 to col. 5, line 14**].

6. With regard to claims 5, 10, 15 and 20, Brewer et al. discloses that each core engine has an associated memory for storing a frame assigned to the engine until the engine is free to perform the operation on the frame **[each Packet Forwarding Engine 13 inherently has it's own memory buffer on accepting different-sized and different-rate packets from either of queues 102 or 103 and before performing the filtering function].**

7. With regard to claim 21, Brewer et al. discloses a system for transmitting multiple data frames to processing functions in a given sequence, performing the processing on the frames, and forwarding the processed frames to their destination in the same given sequence, comprising

a) an input buffer for receiving frames for processing, having a buffer capacity of at least twice the size of the largest frame size , said buffer incorporated into a Data Moving Unit **[Packet Forwarding Engines 13 inspect the packet headers and performs a filtering function on the packets by destination, whether local or external, col. 3, lines 38-47; Packet Forwarding Engine 13 handles either 2 less-than-200 byte inputs from queues 102 or 1 greater-than-200 byte input from queue 103, col. 4, lines 14-18, and col. 4, line 45 to col. 5, line 14];**

b) a Frame Header Processing Unit for determining the type of processing operation to be performed on each frame **[Packet Forwarding Engines 13 inspect the packet headers and performs a filtering function on the packets by destination, whether local or external, col. 3, lines 38-47];**

c) a plurality of processing core engines wherein each core engine has an associated memory for storing a frame assigned to the engine until the engine is free to perform a

processing operation on the frame [**Packet Forwarding Engines 13 inspect the packet headers and performs a filtering function on the packets by destination, whether local or external, col. 3, lines 38-47**];

d) an arbitrator for assigning an ascending frame sequence number to each frame and for forwarding each frame to one of the core engines for deep-packet processing [**Fig. 1, ASIC 11 determines exit path selection for all packets that enter processing block 101 (what Packet Forwarding Engine 13 to send to) and inserts a sequence number on each packet, col. 3, lines 24-29**];

e) an output buffer for collecting each frame as it is processed by a core engine, said buffer comprising a portion of the Data Moving Unit [**Fig. 1, reorder queues 105, 106, and 107 combine the payload with the header information, col. 6, lines 1-4**]; and

f) a sequencer for forwarding processed frames from the output buffer to their destination in the same order as they are received by the input buffer [**Fig. 1, packet ordering block 108 examines reorder queues 105, 106, and 107 for sequence numbers and sends the packets out in the original order, col. 6, lines 1-20**].

9. With regard to claim 22, Brewer et al. discloses a method of transmitting multiple data frames to processing functions in a given sequence, performing the processing on the frames and forwarding the processed frames to their destination in the same given sequence, comprising the steps of:

a) receiving frames into an input buffer that is incorporated into a Data Moving Unit, said buffer having a buffer capacity of at least twice the size of the largest frame size to be processed

[Packet Forwarding Engines 13 inspect the packet headers and performs a filtering function on the packets by destination, whether local or external, col. 3, lines 38-47; Packet Forwarding Engine 13 handles either 2 less-than-200 byte inputs from queues 102 or 1 greater-than-200 byte input from queue 103, col. 4, lines 14-18, and col. 4, line 45 to col. 5, line 14];

b) determining the type of processing operation to be performed on each frame, using a Frame Header Processing Unit **[Packet Forwarding Engines 13 inspect the packet headers and performs a filtering function on the packets by destination, whether local or external, col. 3, lines 38-47];**

c) assigning each frame to one of a plurality of processing core engines, each frame being stored in a memory associated with a core engine until the engine is free to perform the processing operation on the frame **[Fig. 1, ASIC 11 determines exit path selection for all packets that enter processing block 101 (what Packet Forwarding Engine 13 to send to) and inserts a sequence number on each packet, col. 3, lines 24-29];**

d) performing at least one deep-packet processing operation on each frame **[Packet Forwarding Engines 13 inspect the packet headers and performs a filtering function on the packets by destination, whether local or external, col. 3, lines 38-47];**

e) collecting the processed frames in an output buffer that is incorporated into a Data Moving Unit **[Fig. 1, reorder queues 105, 106, and 107 combine the payload with the header information, col. 6, lines 1-4]; and**

f) sequencing and forwarding processed frames to their destination in the same order as received into the input buffer **[Fig. 1, packet ordering block 108 examines reorder queues**

105, 106, and 107 for sequence numbers and sends the packets out in the original order, col. 6, lines 1-20].

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:
 - (a) Brewer et al. (USP 6,711,357), Timing and synchronization for an IP router using an optical switch.
 - (b) Crocker et al. (USP 6,351,454), Apparatus and method for maintaining packet ordering over parallel links of a crossbar based switch fabric.
 - (c) Fujita (USP 5,819,290) Data recording and management system and method for detecting data file division based on quantitative number of blocks.
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Mais whose telephone number is (571) 272-3138. The examiner can normally be reached on 6:00-4:30.
12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 20, 2005



WELLINGTON CHIN
EXAMINER